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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/869,589      06/05/97      STROLLE      C      SAR-12082

LM01/0710  
THOMASON, MOSER AND PATTERSON LLP  
2-40 BRIDGE AVENUE  
P.O. BOX 8160  
RED BANK NJ 07701-5300

EXAMINER

BURD, K

ART UNIT	PAPER NUMBER
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2734

DATE MAILED:

07/10/00

13

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.

08/869,589

Applicant(s)

Strolle

Examiner

Kevin Burd

Group Art Unit

2734



☒ Responsive to communication(s) filed on May 3, 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claim

☒ Claim(s) 1-16 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☒ Claim(s) 11 is/are allowed.

☒ Claim(s) 1, 9, 10, 12, 15, and 16 is/are rejected.

☒ Claim(s) 2-8, 13, and 14 is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## **DETAILED ACTION**

### ***Response to Arguments***

1. This action, in response to the arguments filed 5/9/2000, is a final rejection.
2. Applicant's arguments filed 5/9/2000 have been fully considered but they are not persuasive.

Regarding the 35 USC § 102 of claims 1, 9, 10, 12, 15 and 16 as being anticipated by Norrell (US 5,793,821), applicant states "Norrell fails to teach or suggest a pre-equalizer for adjusting the amplitudes of the bandedges of a broadband signal in response to a control signal" (page 2, second paragraph). However, Norrell states in column 9 lines 11-15, "This filtering technique is superior to simple amplitude equalization of the channel prior to extraction of the timing envelope, because equalization boost the desired energy at the bandedges, but also boost the unwanted energy near the bandedges." Norrell clearly suggests a step of equalizing for adjusting the amplitude of the bandedges even though it is not used in this invention. A disclosed filtering technique is used instead so the unwanted energy around the bandedges is not amplitude adjusted. Therefore, the rejections under 35 USC § 102 for claims 1, 9, 10, 12, 15 and 16 stand and are repeated below.

Regarding the 35 USC § 103 of claims 1, 9, 10, 12, 15 and 16 as being anticipated by Gitlin (US 4,253,184), applicant states Gitlin fails to teach or suggest the

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filtering of any portion of a received signal and therefore does not teach the extraction of a bandedge signal and generating a control signal in response to a bandedge signal (page 5, second paragraph of the remarks filed by the applicant). Applicant does acknowledge Gitlin teaches an equalizer for adjusting the amplitudes of a baseband signal in response to a control signal. Applicant states the components cited by the examiner "simply fail to filter any portion of the received signal." The examiner cited elements 17-19 and 21 of figure 1 of Gitlin. Element 17 is shown in more detail on figure 3 of Gitlin where it is disclosed element 17 possesses numerous filtering units 71-1 to 71-m. These elements receive the input signal and carry out a filtering function. If the baseband filters of the equalizer and the post-equalizer were replaced with bandedge filters, the bandedges would be recovered instead of the baseband information. The bandedge's timing signal jitter could be reduced just as the timing jitter is reduced in the above reference. It would have been obvious for one of ordinary skill in the art at the time of the invention to replace the baseband filters of the equalizers with bandedge filters to reduce the signal jitter of the bandedges. Therefore, the rejections under 35 USC § 103 for claims 1, 9, 10, 12, 15 and 16 stand and are repeated below.

***Claim Rejections - 35 USC § 102***

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3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

4. Claims 1, 9, 10, 12, 15 and 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Norrell et al (US 5,793,821).

Regarding claims 1 and 12, Norrell et al (Norrell) disclose an apparatus for equalizing the amplitudes of a signal (column 7 line 65 to column 8 line 2) comprising:

a timing interpolation filter (figure 5 item 504) for providing samples for the upper and lower bandedge filters (column 8 lines 7-14) and a delay line (figure 5 item 506) which is part of the modem receiver's adaptive equalizer (column 9 lines 34-35) where the delay line is long enough to compensate for the amplitude and delay distortion in general, it is long enough to compensate for the differential delay distortion at a particular pair of frequencies (column 9 lines 43-48);

upper and lower bandedge filters (figure 5 items 508 and 512) which extracts the bandedge signal; and

a signal processor (figure 5 item 518-530 and column 8 lines 50-67) which provides a control signal to the filters to remove noise and interference to compensate for the amplitude distortions.

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Regarding claim 9, 10, 15 and 16, Norrell further discloses an apparatus and method for equalizing the amplitudes of the bandedges of a broadband signal as stated above in paragraph 4. Through the course of compensating for the effects of amplitude distortion, the bandedge signals must be attenuated and amplified.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 9, 10, 12, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gitlin et al (US 4,253,184).

Regarding claims 1 and 12, Gitlin et al [Gitlin] discloses an apparatus for equalizing the amplitudes of a signal comprising:

an equalizer (column 3 lines 51-56 and figure 1 items 11-14, 16 and 33) for adjusting the amplitudes of the signal in response to a control signal (figure 1);

a filter (figure 1 items 17-19, 20 and 21) which recovers the baseband data (column 3 lines 33-36); and

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an upmodulator (figure 1 item 26) connected to the post-equalizer and decision circuit, for generating control signals in response to the difference of the output signals of a post-equalizer and recovered baseband data (figure 1).

Gitlin does not disclose the use of bandedge signals in the above apparatus. However, if the baseband filters of the equalizer and the post-equalizer were replaced with bandedge filters, the bandedges would be recovered instead of the baseband information. The bandedge's timing signal jitter could be reduced just as the timing jitter is reduced in the above reference. Therefore it would have been obvious for one of ordinary skill in the art at the time of the invention to replace the baseband filters of the equalizers with bandedge filters to reduce the signal jitter of the bandedges.

Regarding claim 9, 10, 15 and 16, Gitlin further discloses an apparatus and method for equalizing the amplitudes of the bandedges of a broadband signal as stated above in paragraph 4. Through the course of compensating for the effects of amplitude distortion, the bandedge signals must be attenuated and amplified.

#### **Allowable Subject Matter**

7. Claims 2-8, 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. Claim 11 is allowed.

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9. The following is a statement of reasons for the indication of allowable subject matter:

None of the cited references fails to teach the further arrangement of the band edge signal processor, the apparatus and method for equalizing the amplitudes of the bandedges of the broadband signal as recited in the claims 2, 3, 4, 5, 6, 7, 13 and 14 and the equalizer having the form as stated in claim 8.

Claim 11 is allowable because none of the cited references teach the arrangement of pre-equalizer, bandedge filter, a first Hilbert filter, a second Hilbert filter, a first magnitude processor, a second magnitude processor, a subtractor and a loop filter in order to form the apparatus for equalizing the amplitudes of the bandedges of a broadband signal as recited in claim 11.

### ***Conclusion***

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any



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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

**Contact Information**

11. **Any response to this final action should be mailed to:**

**Box AF**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 308-9051, (for formal communications; please mark  
"EXPEDITED PROCEDURE")

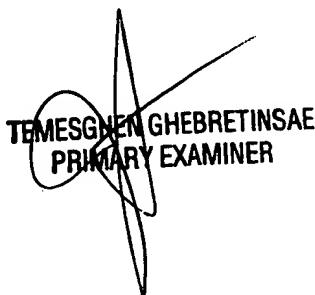
**Or:**

(703) 308-6743, (for informal or draft communications, please label  
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd, whose telephone number is (703) 308-7034. The Examiner can normally be reached on Monday-Thursday from 8:00 AM - 4:30 PM. The examiner can also be reached on alternate Friday.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4900.

  
TEMESGHEBRETINSAE  
PRIMARY EXAMINER



KEVIN M. BURD  
PATENT EXAMINER  
July 5, 2000